

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appln. No. 10/529,818 (Q87174)

REMARKS

Status of Claims

In the present Amendment, independent claims 1, 6, 27 and 34 have been amended to provide that “the transparent conductive layer physically contacts an electrolyte solution via the oxide semiconductor porous film outside of the insulating layer” and that “at least a part of the oxide semiconductor porous film directly contacts the transparent conductive layer.” Support is found, for example, in FIG. 1A of the present application and the corresponding disclosure of the specification. Since the oxide semiconductor porous film 2, which is located between the transparent conductive layer 11 and the electrolyte solution 5 in FIG. 1A, is a porous thin film, the transparent conductive layer 11 can physically contact an electrolyte solution 5 via the oxide semiconductor porous film 2 outside of the insulating layer 14. In addition, it is clear in FIG. 1A that at least a part of the oxide semiconductor porous film 2 directly contacts the transparent conductive layer 11.

Claims 35-45 have been added. Support is found, for example, in FIG. 1A of the present application. In addition, Applicants point out that claim 37 corresponds to canceled claim 2, claim 42 corresponds to claim 28, and claim 43 corresponds to claim 29.

No new matter has been added, and entry of the Amendment is requested. Upon entry of the Amendment, claims 1, 6, 27 and 34-45 will be pending.

(1) In Paragraph No. 6, on page 3 of the Office Action, claims 1, 2, 6, 27-29 and 34 were rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

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The Examiner asserts that the recitation “the transparent conductive layer contacts an electrolyte solution via the oxide semiconductor porous film outside of the insulating layer,” which was added in the amendment filed April 26, 2010, is not supported in the specification.

Applicants respectfully traverse.

Written description under 35 U.S.C. § 112, first paragraph, requires that a specification “clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed.” *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (*en banc*), quoting *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563 (Fed. Cir. 1991). The applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the claimed invention. *See Vas-Cath*, 935 F.2d at 1563-64. Written description compliance, therefore, requires sufficient information in the specification to show that the inventor possessed the invention at the time of the original disclosure. *See, e.g., Pandrol USA LP v. Airboss Railway Products Inc.*, 424 F.3d 1161, 1165, 76 USPQ2d 1524, 1526 (Fed. Cir. 2005).

Applicants submit that the claim element criticized by the Examiner has full written description support in the specification. One of ordinary skill in the art would understand that Applicants were in possession of a transparent conductive layer that contacts an electrolyte solution via a oxide semiconductor porous film outside of the insulating layer, in view of FIG. 1A and the corresponding disclosure of the specification.

In addition, Applicants have amended the claims herein for further clarity to provide that “the transparent conductive layer physically contacts an electrolyte solution via the oxide semiconductor porous film outside of the insulating layer.” As noted above, since the oxide semiconductor porous film 2, which is located between the transparent conductive layer 11 and

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the electrolyte solution **5** in FIG. 1A, is a porous thin film, the transparent conductive layer **11** can physically contact an electrolyte solution **5** via the oxide semiconductor porous film **2** outside of the insulating layer **14**. In other words, the transparent conductive layer **11** physically contacts the electrolytic solution, because the electrolytic solution can move through the pores of the oxide semiconductor porous film **2**.

Accordingly, one of ordinary skill in the art would also understand that Applicants were in possession of a transparent conductive layer that physically contacts an electrolyte solution via a oxide semiconductor porous film outside of the insulating layer, in view of FIG. 1A and the corresponding disclosure of the specification.

In view of the above, Applicants request reconsideration and withdrawal of the rejection of claims 1, 2, 6, 27-29 and 34 as allegedly failing comply with the written description requirement.

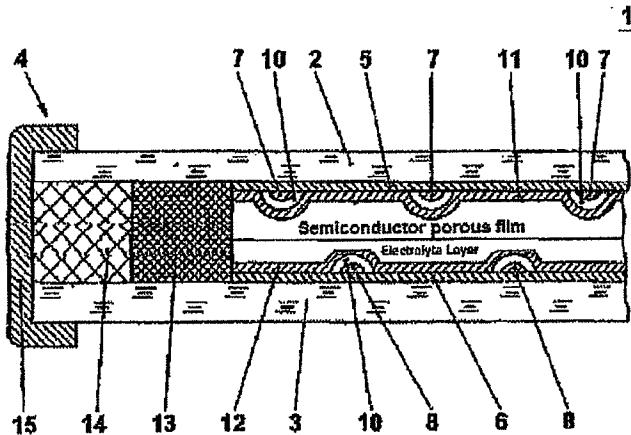
(2) In Paragraph No. 8, on page 3 of the Office Action, claims 1, 2 and 6 were rejected under 35 U.S.C. § 103 as being unpatentable over Kurth (WO 00/48212, and referring to U.S. Patent No. 6,462,266 for translation) in view of Yoshikawa (U.S. Pub. No. 2002/0040728).

In addition, in Paragraph No. 9, on page 6 of the Office Action, claims 27-29 and 34 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kurth in view of Yoshikawa, and further in view of Mohri et al. (U.S. Patent No. 4,396,682) (hereinafter “Mohri”).

The Examiner refers to film **20** of Yoshikawa as teaching the claimed oxide semiconductor porous film. *See* paragraph [0085] of Yoshikawa. The Examiner asserts that it would have been obvious to modify the structure of Kurth to include the porous oxide layer **20** of Yoshikawa, and in this regard, the Examiner includes a modified drawing on page 6 of the Office

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Action, which has been reproduced below, showing the structure that would be obtained by the Examiner's combination.



Applicants respectfully traverse.

Even if, *arguendo*, it would have been obvious to make the modification of Kurth based on the teachings of Yoshikawa, the structure obtained by the combination would not meet the structure of the present claims.

The Examiner's combination would include layer 11 of Kurth disposed between the porous film and the transparent conductive layer 5 of Kurth. Similarly, the undercoating layer 60 of Yoshikawa is present between porous film 20 and electrically conducive layer 10a of Yoshikawa. Accordingly, the combination of Kurth and Yoshikawa set forth by the Examiner would include a layer between the porous film and the transparent electrode.

In contrast, in FIG. 1A of the present application, the porous film directly contacts portions of the transparent conductive layer. Likewise, the independent claims of the present application provide that "at least a part of the oxide semiconductor porous film directly contacts the transparent conductive layer."

In addition, Applicants submit that a counter electrode without a metal circuit layer can shorten the distance between the electrode substrate 1 and the counter electrode 4 by the height

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of the metal circuit layer. This is beneficial in that, as the distance between the electrode substrate and the counter electrode decreases, the electrons, which move between the electrode substrate and the counter electrode, will receive less resistance.

In view of the above, Applicants request reconsideration and withdrawal of the rejections of present claims under 35 U.S.C. § 103(a).

Conclusion

Reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the local, Washington, D.C., telephone number listed below.

The U.S. Patent and Trademark Office is hereby directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

/ Michael G. Raucci /

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE

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CUSTOMER NUMBER

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Michael G. Raucci
Registration No. 61,444